NAEP 2005 Science Report for California

This report provides selected results from the National Assessment of Educational Progress (NAEP) for California's public school students at grades 4 and 8. Starting in 1996, science has been assessed in three different years at the state level (at grade 8 in 1996, and at both grades 4 and 8 in 2000 and 2005).

In the 2005 assessment, 45 jurisdictions participated: 44 states and the Department of Defense Education Activity Schools (domestic and overseas). California participated and met the criteria for reporting public school results.

NAEP is a project of the National Center for Education Statistics (NCES). For more information about the assessment, see *The Nation's Report Card, Science 2005,* which is available on the NAEP website along with the full set of national and state results in an interactive database (http://nces.ed.gov/nationsreportcard/). Released test questions, scoring guides, and question-level performance data are also available on the website.

K E Y F I N D I N G S F O R 2 0 0 5

Grade 4:

- The average science score for students in California was 137. This was higher than that in 2000 (129).
- California's average score (137) was lower than that of the nation's public schools (149).
- In California, 17 percent of students performed at or above *Proficient*. This was greater than that in 2000 (13 percent).
- In California, the percentage of students who performed at or above *Proficient* was smaller than that for the nation's public schools (27 percent).
- The percentage of students in California who performed at or above *Basic* was 50 percent. This was not significantly different from that in 2000 (45 percent).
- In California, the percentage of students who performed at or above *Basic* was smaller than that for the nation's public schools (66 percent).

Grade 8:

- The average science score for students in California was 136. This was not significantly different from that in 1996 (138) and was higher than that in 2000 (129).
- California's average score (136) was lower than that of the nation's public schools (147).
- In California, 18 percent of students performed at or above *Proficient*. This was not significantly different from that in 1996 (20 percent) and was greater than that in 2000 (14 percent).
- In California, the percentage of students who performed at or above *Proficient* was smaller than that for the nation's public schools (27 percent).
- The percentage of students in California who performed at or above *Basic* was 44 percent. This was not significantly different from that in 1996 (47 percent) and was greater than that in 2000 (38 percent).
- In California, the percentage of students who performed at or above *Basic* was smaller than that for the nation's public schools (57 percent).

Introduction

What Was Assessed?

The content for each NAEP assessment is determined by the National Assessment Governing Board (NAGB). The objectives for each NAEP assessment are described in a "framework," a document that delineates the important content and process areas to be measured, as well as the types of questions to be included in the assessment.

The *Science Framework for the 2005 National Assessment of Educational Progress* guided the 2005 assessment. The same framework was used by NAGB for the 1996 and 2000 science assessments. The 2005 framework document can be accessed at the NAGB website at http://www.nagb.org/pubs/s_framework_05/761907-ScienceFramework.pdf.

The science framework is organized along two major dimensions: Fields of Science, including Earth, physical and life sciences; and Knowing and Doing Science, including conceptual understanding, scientific investigation, and practical reasoning. Each assessment question is categorized as primarily measuring one of the elements of knowing and doing within one of the fields of science.

To ensure that the NAEP assessment integrates the three fields of Science rather than simply assessing three separate content areas, the framework specifies two overarching domains that describe science: the *nature of science* and *themes.* The nature of science incorporates the historical development of science and technology, the habits of mind that characterize these fields, and methods of inquiry and problem-solving. It also encompasses the nature of technology. Themes are the "big ideas" that transcend the various scientific disciplines, and include systems, models and patterns of change. The overarching domains pertain to a subset of questions within the assessment.

A combination of multiple-choice and constructed-response questions was used to assess students' knowledge of important facts and concepts and to probe their analytical and problem solving skills. Constructed-response questions ask students to explain, apply, design, and communicate scientific information. In addition, about half of the students assessed were administered a hands-on task that probes students' abilities to use materials to perform investigations, evaluate experimental results, and apply problem-solving skills. The same series of test booklets was used in both the national and the state assessments. Each student receives only a portion of the assessment, consisting of a booklet containing two 25-minute sections of science questions. Released test questions, along with student performance data by state, are available on the NAEP website (http://nces.ed.gov/nationsreportcard/itmrls/).

Who Was Assessed?

Forty-five jurisdictions participated in the voluntary NAEP science assessment in 2005: This number included 44 states and the Department of Defense Education Activity Schools (domestic and overseas). The District of Columbia, normally a part of NAEP state assessments, did not participate in the science assessment because the mandatory reading and mathematics samples did not allow sufficient student samples for the third subject. The target sample for each state or other jurisdiction was approximately 100 schools at each grade tested and approximately 3,000 students for each subject at each grade, except in small or sparsely populated jurisdictions.

The sample of schools and students was chosen in a two-stage sampling process. First, the sample of schools was selected by probability sampling methods. Then, within the participating schools, random samples of students were chosen.

Beginning with the NAEP reading and writing assessments in 2002, the national sample was obtained by aggregating the samples from each state. The national results for science in 2005 include the results from the states and from a sample of private schools, weighted appropriately to represent the U.S. student population. Only public schools, however, are included in the state reports. State results are compared to national results for public school students within the report tables.

The NAEP state assessment in science was first administered to public school students at grade 8 in 1996 and was expanded to include students at grade 4 as well as grade 8 in 2000 and again in 2005.

The overall participation rates for schools and students must meet guidelines established by the National Center for Education Statistics (NCES) and the National Assessment Governing Board (NAGB) in order for assessment results to be reported publicly. Participation rates for the original sample needed to be at least 85 percent for schools in each grade.

Participation rates for the 2005 science assessment are available at the NAEP website (http://nces.ed.gov/nationsreportcard/science/sampledesign.asp).

How Is Student Science Performance Reported?

The results of student performance on the NAEP assessments are reported for various groups of students (e.g., fourth-grade female students, eighth-grade Hispanic students, or students who took the assessment in a particular year). NAEP does not produce scores for individual students, nor does it report scores for schools or for school districts. Some large urban districts, however, have voluntarily participated in the assessment on a trial basis and were sampled as states were sampled. Science performance for groups of students is reported in two ways: as average scale scores and as achievement levels.

Scale Scores: Student performance is reported as an average score based on the NAEP science scale, which ranges from 0 to 300 and is linked to the corresponding scales in 1996 and 2000. Subscales were created to reflect performance on each of the three content areas defined in the NAEP science framework.

An overall composite scale was developed by weighting each of the science subscales (Earth, physical, and life) for the grade based on its relative importance in the framework. This composite scale is the metric used to present the average scale scores and selected percentiles used in NAEP reports. While the numeric scale score ranges are identical for each grade, the scales were derived independently for each grade. Therefore, scale scores across grades cannot be compared.

Achievement Levels: Student performance is also reported in terms of three achievement levels—*Basic, Proficient*, and *Advanced*. Results based on achievement levels are expressed in terms of the percentage of students who attained each level. The three achievement levels are defined as follows:

- *Basic*: This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
- *Proficient*: This level represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
- *Advanced*: This level signifies superior performance.

The achievement levels are cumulative. Therefore, students performing at the *Proficient* level also display the competencies associated with the *Basic* level, and students at the *Advanced* level demonstrate the competencies associated with both the *Basic* and the *Proficient* levels.

The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB) as part of its statutory responsibilities mandated by Congress. The levels represent collective judgments of what students should know and be able to do for each grade tested. They are based on recommendations made by broadly representative panels of classroom teachers, education specialists, and members of the general public from throughout the United States. As provided by law, the National Center for Education Statistics (NCES), upon review of congressionally mandated evaluations of NAEP, has determined that the achievement levels are to be used on a trial basis until it is determined that they are "reasonable, valid, and informative to the public" (No Child Left Behind Act of 2001, P.L., 107-110, 115 Stat.1425 [2002]). However, both NCES and NAGB believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials as a common yardstick for academic performance. The science achievement-level descriptions are summarized in figure 1.

Figure 1-A	The Nation's Report Card 2005 State Assessment
	Descriptions of NAEP science achievement levels, grade 4

Basic Level (138)	Students performing at the *Basic* level demonstrate some of the knowledge and reasoning required for understanding the Earth, physical, and life sciences at a level appropriate to grade 4. For example, they can carry out simple investigations and read uncomplicated graphs and diagrams. Students at this level also show a beginning understanding of classification, simple relationships, and energy.

Fourth-grade students performing at the *Basic* level are able to follow simple procedures, manipulate simple materials, make observations, and record data. They are able to read simple graphs and diagrams and draw reasonable but limited conclusions based on data provided to them. These students can recognize appropriate experimental designs, although they are unable to justify their decisions.

When presented with diagrams, students at this level can identify seasons; distinguish between day and night; and place the position of the Earth, Sun, and planets. They are able to recognize major energy sources and simple energy changes. In addition, they show an understanding of the relationship between sound and vibrations. These students are able to identify organisms by physical characteristics and group organisms with similar physical features. They can also describe simple relationships among structure, function, habitat, life cycles, and different organisms.

Proficient Level (170)	Students performing at the *Proficient* level demonstrate the knowledge and reasoning required for understanding the Earth, physical, and life sciences at a level appropriate to grade 4. For example, they understand concepts relating to the Earth's features, physical properties, structure, and function. In addition, students can formulate solutions to familiar problems as well as show a beginning awareness of issues associated with technology.

Fourth-grade students performing at the *Proficient* level are able to provide an explanation of day and night when given a diagram. They can recognize major features of the Earth's surface and the impact of natural forces. They are also able to recognize water in its various forms in the water cycle and can suggest ways to conserve it. These students recognize that various materials possess different properties that make them useful. Students at this level are able to explain how structure and function help living things survive. They have a beginning awareness of the benefits and challenges associated with technology and recognize some human effects on the environment. They can also make straightforward predictions and justify their position.

Advanced Level (205)	Students performing at the *Advanced* level demonstrate a solid understanding of the Earth, physical, and life sciences as well as the ability to apply their understanding to practical situations at a level appropriate to grade 4. For example, they can perform and critique simple investigations, make connections from one or more of the sciences to predict or conclude, and apply fundamental concepts to practical applications.

Fourth-grade students performing at the Advanced level are able to combine information, data, and knowledge from one or more of the sciences to reach a conclusion or to make a valid prediction. They can also recognize, design, and explain simple experimental procedures.

Students at this level recognize nonrenewable sources of energy. They also recognize that light and sound travel at different speeds. These students understand some principles of ecology and are able to compare and contrast life cycles of various common organisms. In addition, they have a developmental awareness of the benefits and challenges associated with technology.

NOTE: The scores in parentheses indicate the cut point on the scale at which the achievement-level range begins.
SOURCE: National Assessment Governing Board. (2004). *Science Framework for the 2005 National Assessment of Educational Progress.* Washington, DC: Author.

Figure 1-B	The Nation's Report Card 2005 State Assessment
	Descriptions of NAEP science achievement levels, grade 8

Basic Level (143)	Students performing at the *Basic* level demonstrate some of the knowledge and reasoning required for understanding the Earth, physical, and life sciences at a level appropriate to grade 8. For example, they can carry out investigations and obtain information from graphs, diagrams, and tables. In addition, they demonstrate some understanding of concepts relating to the solar system and relative motion. Students at this level also have a beginning understanding of cause-and-effect relationships.

Eighth-grade students performing at the *Basic* level are able to observe, measure, collect, record, and compute data from investigations. They can read simple graphs and tables and are able to make simple data comparisons. These students are able to follow directions and use basic science equipment to perform simple experiments. In addition, they have an emerging ability to design experiments. Students at this level have some awareness of causal relationships. They recognize the position of planets and their movement around the Sun and know basic weather-related phenomena. These students can explain changes in position and motion such as the movement of a truck in relation to that of a car. They also have an emerging understanding of the interrelationships among plants, animals, and the environment.

Proficient Level (170)	Students performing at the *Proficient* level demonstrate much of the knowledge and many of the reasoning abilities essential for understanding the Earth, physical, and life sciences at a level appropriate to grade 8. For example, students can interpret graphic information, design simple investigations, and explain such scientific concepts as energy transfer. Students at this level also show an awareness of environmental issues, especially those addressing energy and pollution.

Eighth-grade students performing at the *Proficient* level are able to create, interpret, and make predictions from charts, diagrams, and graphs based on information provided to them or from their own investigations. They have the ability to design an experiment and have an emerging understanding of variables and controls. These students are able to read and interpret geographic and topographic maps. In addition, they have an emerging ability to use and understand models, can partially formulate explanations of their understanding of scientific phenomena, and can design plans to solve problems.

Students at this level can begin to identify forms of energy and describe the role of energy transformations in living and nonliving systems. They have knowledge of organization, gravity, and motion within the solar system and can identify some factors that shape the surface of the Earth. These students have some understanding of properties of materials and have an emerging understanding of the particulate nature of matter, especially the effect of temperature on states of matter. They also know that light and sound travel at different speeds and can apply their knowledge of force, speed, and motion. These students demonstrate a developmental understanding of the flow of energy from the Sun through living systems, especially plants. They know that organisms reproduce and that characteristics are inherited from previous generations. These students also understand that organisms are made up of cells and that cells have subcomponents with different functions. In addition, they are able to develop their own classification system based on physical characteristics. These students can list some effects of air and water pollution as well as demonstrate knowledge of the advantages and disadvantages of different energy sources in terms of how they affect the environment and the economy.

Advanced Level (208)	Students performing at the *Advanced* level demonstrate a solid understanding of the Earth, physical, and life sciences as well as the abilities required to apply their understanding in practical situations at a level appropriate to grade 8. For example, students can perform and critique the design of investigations, relate scientific concepts to each other, explain their reasoning, and discuss the impact of human activities on the environment.

Eighth-grade students performing at the *Advanced* level are able to provide an explanation for scientific results. They have a modest understanding of scale and are able to design a controlled experiment.

These students have an understanding of models as representations of natural systems and can describe energy transfer in living and nonliving systems. Students at this level are able to understand that present physical clues, including fossils and geological formations, are indications that the Earth has not always been the same and that the present is a key to understanding the past. They have a solid knowledge of forces and motions within the solar system and an emerging understanding of atmospheric pressure. These students can recognize a wide range of physical and chemical properties of matter and some of their interactions and understand some of the properties of light and sound. Also, they can infer relationships between structure and function. These students know the differences between plant and animal cells and can apply their knowledge of food as a source of energy to a practical situation. In addition, they are able to explain the impact of human activities on the environment and the economy.

NOTE: The scores in parentheses indicate the cut point on the scale at which the achievement-level range begins.
SOURCE: National Assessment Governing Board. (2004). *Science Framework for the 2005 National Assessment of Educational Progress.* Washington, DC: Author.

Assessing Students With Disabilities (SD) and/or English Language Learners (ELL)

The results displayed in this report and official publications of NAEP 2005 results are based on representative samples that include students with disabilities (SD) and students who are English language learners (ELL). Some of these students were assessed using accommodations (such as extra time and testing in small groups). In state NAEP science assessments prior to 2000, no testing accommodations or adaptations were permitted for students with disabilities and students who were English language learners. However, research carried out by NAEP showed that the results for students who were accommodated could be combined with the results for unaccommodated students without compromising the validity of the NAEP scales in trend comparisons. Therefore, the students who were identified as SD or ELL and typically received accommodations in their classroom testing, and who required these accommodations to participate, also received them in the NAEP assessment, provided the accommodations did not change the nature of what was tested.

Students who had an Individualized Education Program (IEP) or were protected under Section 504 of the Rehabilitation Act of 1973 were to be included in the NAEP assessment except when

- the school's IEP team determined that the student's cognitive functioning was so severely impaired that she or he could not participate;
- the student's IEP required that the student had to be tested with an accommodation or adaptation that NAEP does not allow, and the student could not demonstrate his or her knowledge without that accommodation.

All ELL students who received academic instruction in English for three years or more were to be included in the assessment. Those ELL students who received instruction in English for less than three years were to be included unless school staff judged them to be incapable of participating in the assessment in English.

In 2000, NAEP was administered using a split sample of schools—one sample in which accommodations were permitted for special-needs students who normally received them and another sample in which accommodations were not permitted. Therefore, there were two different sets of results available for 2000. The results for both samples are shown in the tables in this report. Results for the assessment year where accommodations were not permitted in state NAEP assessments (1996) are reported in the same tables as the results where accommodations were permitted (2000 and 2005).

Cautions in Interpreting Results

The averages and percentages in this report are estimates based on samples of students rather than on entire populations. Moreover, the collection of questions used at each grade level is only a sample of the many questions that could have been asked to assess the skills and abilities described in the NAEP framework. Therefore, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates—a range of up to a few points above or below the score or percentage—which takes into account potential score fluctuation due to sampling error and measurement error. Statistical tests that factor in these standard errors are used to determine whether the differences between average scores or percentages are significant. All differences were tested for statistical significance at the .05 level.

NAEP sample sizes have increased since 2002 compared to previous years, resulting in smaller standard errors. As a consequence, smaller differences are detected as statistically significant than in previous assessments. In addition, estimates based on smaller groups are likely to have relatively large standard errors. As a consequence, some seemingly large differences may not be statistically significant. That is, it cannot be determined whether these differences are due to the particular makeup of the samples of students who were selected, or to true differences in the performance of the population of interest. The standard errors for the data in the tables of this report can be accessed online in the NAEP Data Explorer at (http://nces.ed.gov/nationsreportcard/nde/).

Differences between scores or between percentages are discussed in this report only when they are significant from a statistical perspective. Statistically significant differences are referred to as "significant differences" or "significantly different." Significant differences between 2005 and prior assessments are marked with a notation (*) in the tables. Any differences in scores within a year or across years that are mentioned in the text as "higher," "lower," "greater," or "smaller" are statistically significant.

It is important to note that simple cross-tabulations of a variable with measures of educational achievement, like the ones presented in this report, cannot constitute proof that a difference in the variable causes differences in educational achievement. There might be several reasons why the performance of one group of students might differ from another. Only through controlled experiments with random assignment of students to groups can hypotheses about the causes of performance differences be tested.

NAEP 2005 Science Overall Scale Score and Achievement-Level Results for Public School Students

Overall Scale Score Results

In this section student performance is reported as an average score based on the NAEP science scale, which ranges from 0 to 300. Scores on this scale are comparable from 1996 through 2005. Scales are created separately for each grade. Therefore, the scores across grades cannot be compared.

Prior to 2000, testing accommodations were not provided for students with special needs in NAEP state science assessments. For 2000, results are displayed for both the sample in which accommodations were permitted and the sample in which they were not permitted. Subsequent assessment results were based on the more inclusive samples. In the text of this report, comparisons to 2000 results refer only to the sample in which accommodations were permitted.

Tables 1-A and 1-B show the overall performance results of grades 4 and 8 public school students in California, the nation (public), and the region. The list of states making up a given region for NAEP prior to 2003 differed from the list used by the U.S. Census Bureau which has been used in NAEP from 2003 onward. Therefore, the data for the state's region are given only for 2005. A list of states comprising each region can be found online at http://nces.ed.gov/nationsreportcard/science/interpret-results.asp.

The first column of results presents the average score on the NAEP science scale. The remaining columns show the scores at selected percentiles. A percentile indicates the percentage of students whose scores fell at or below a particular score. For example, the 25th percentile demarks the cut point for the lowest 25 percent of students within the distribution of scale scores. The scale score given is the score for students at the given percentile, not the average score for students within a percentile range.

Grade 4 Scale Score Results

- In 2005, the average scale score for students in California was 137. This was lower than that for students across the nation (149).
- In California, the average scale score for students in 2005 was higher than that in 2000 (129). Similarly, the average scale score for students in public schools across the nation in 2005 was higher than that in 2000 (145).

Table 1-A **The Nation's Report Card 2005 State Assessment**

Average science scale scores and selected percentiles, grade 4 public schools: 2000 and 2005

Year and jurisdiction		Average scale score	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
2000[1]	Nation (public)	148	103*	127*	151	173	190*
	California	131*	82*	109	135	158	176
2000	Nation (public)	145*	97*	122*	148*	171	189
	California	129*	77*	105*	133*	157	175*
2005	Nation (public)	149	107	129	152	172	188
	West[2]	143	98	121	145	167	184
	California	137	92	113	138	162	180

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.

NOTE: The NAEP grade 4 science scale ranges from 0 to 300. All differences were tested for statistical significance at the .05 level using unrounded numbers. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Grade 8 Scale Score Results

- In 2005, the average scale score for students in California was 136. This was lower than that for students across the nation (147).
- In California, the average scale score for students in 2005 was not significantly different from that in 1996 (138).
- In the nation, the average scale score for students in 2005 was not significantly different from that in 1996 (148).
- In California, the average scale score for students in 2005 was higher than that in 2000 (129). However, the average scale score for students in public schools across the nation in 2005 was not significantly different from that in 2000 (148).

The Nation's Report Card 2005 State Assessment

Table 1-B

Average science scale scores and selected percentiles, grade 8 public schools: 1996, 2000, and 2005

Year and jurisdiction		Average scale score	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
1996[1]	Nation (public)	148	102	126	151	172	191
	California	138	89	115	140	164	183
2000[1]	Nation (public)	149*	101	125	152	175*	194*
	California	132*	84	108	134	158	179
2000	Nation (public)	148	99	124	150	174	193*
	California	129*	76*	103*	131*	157*	177
2005	Nation (public)	147	100	124	150	172	191
	West[2]	142	94	118	144	168	187
	California	136	88	112	138	162	182

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.

NOTE: The NAEP grade 8 science scale ranges from 0 to 300. All differences were tested for statistical significance at the .05 level using unrounded numbers. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2005 Science Assessments.

Overall Achievement-Level Results

In this section student performance is reported as the percentage of students performing relative to performance standards set by the National Assessment Governing Board (NAGB). These performance standards for what students should know and be able to do were based on the recommendations of broadly representative panels of educators and members of the public.

In 2000 only, results were obtained for two student samples: one for which accommodations were permitted and one for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample in which accommodations were permitted.

Tables 2-A and 2-B present the percentage of students at grades 4 and 8 who performed below *Basic*, at or above *Basic*, at or above *Proficient*, and at the *Advanced* level. Because the percentages are cumulative from *Basic* to *Proficient* to *Advanced*, they sum to more than 100 percent. Only the percentage of students performing at or above *Basic* (which includes the students at *Proficient* and *Advanced)* plus the students below *Basic* will sum to 100 percent (except for rounding).

Grade 4 Achievement-Level Results

- In 2005, 17 percent of California's students performed at or above *Proficient*. This was smaller than the percentage of the nation's public school students who performed at or above *Proficient* (27 percent).
- In California, the percentage of students who performed at or above *Proficient* in 2005 was greater than that in 2000 (13 percent).

The Nation's Report Card 2005 State Assessment

Table 2-A

Percentage of students at or above science achievement levels, grade 4 public schools: 2000 and 2005

Year and jurisdiction		Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
2000[1]	Nation (public)	36	64	28	3*
	California	53	47	14	1
2000	Nation (public)	39*	61*	26	3
	California	55	45	13*	1
2005	Nation (public)	34	66	27	2
	West[2]	42	58	22	2
	California	50	50	17	1

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.

NOTE: Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Grade 8 Achievement-Level Results

- In 2005, 18 percent of California's students performed at or above *Proficient*. This was smaller than the percentage of the nation's public school students who performed at or above *Proficient* (27 percent).
- In California, the percentage of students who performed at or above *Proficient* in 2005 was not significantly different from that in 1996 (20 percent).
- In California, the percentage of students who performed at or above *Proficient* in 2005 was greater than that in 2000 (14 percent).

The Nation's Report Card 2005 State Assessment

Table 2-B

Percentage of students at or above science achievement levels, grade 8 public schools: 1996, 2000, and 2005

Year and jurisdiction		Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
1996[1]	Nation (public)	40	60	27	3
	California	53	47	20	1
2000[1]	Nation (public)	41	59	30*	4
	California	60	40	15	1
2000	Nation (public)	43	57	29	4*
	California	62*	38*	14*	1
2005	Nation (public)	43	57	27	3
	West[2]	48	52	23	2
	California	56	44	18	2

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.

NOTE: Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2005 Science Assessments.

Comparisons Between California, the Nation, and Other Participating States and Jurisdictions

Forty-five jurisdictions participated in the science assessment in 2005. These include 44 states and the Department of Defense Education Activity (DoDEA) schools (domestic and overseas). Previous NAEP reports presented results for the Department of Defense Dependents Schools (DoDDS) overseas and the Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS) in the United States separately. Data for the two jurisdictions in prior years have been retroactively combined to provide comparable data for the single DoDEA jurisdiction.

Comparisons by Average Scale Scores

Figures 2-A and 2-B compare California's 2005 overall science scale scores at grades 4 and 8 with those of public schools in the nation and all other participating states and jurisdictions. The different shadings indicate whether the average score of the nation (public), a state, or a jurisdiction was found to be higher than, lower than, or not significantly different from that of California in the NAEP 2005 science assessment.

Grade 4 Scale Score Comparisons Results

- Students' average score in California was higher than the score in 1 jurisdiction, not significantly different from those in 1 jurisdiction, and lower than those in 42 jurisdictions.

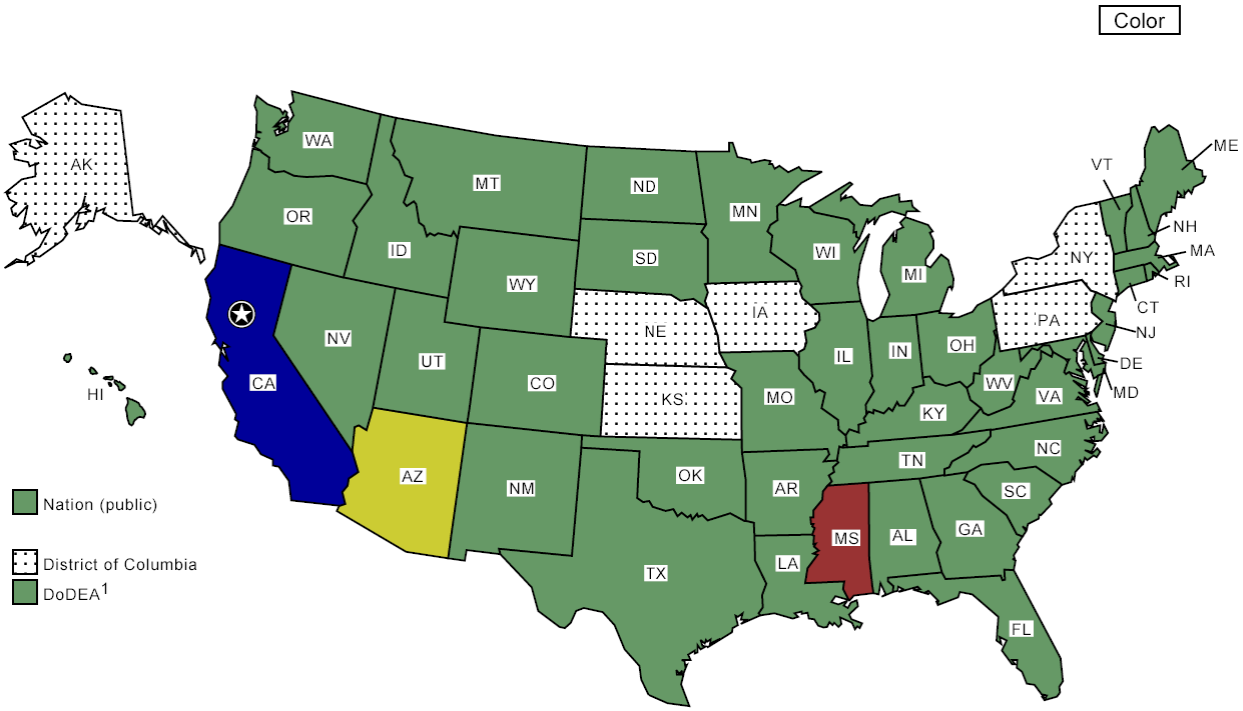
Grade 8 Scale Score Comparisons Results

- Students' average score in California was higher than the score in 1 jurisdiction, not significantly different from those in 5 jurisdictions, and lower than those in 38 jurisdictions.

The Nation's Report Card 2005 State Assessment

Figure 2-A

California's average science scale score compared with scores for the nation and other participating jurisdictions, grade 4 public schools: 2005



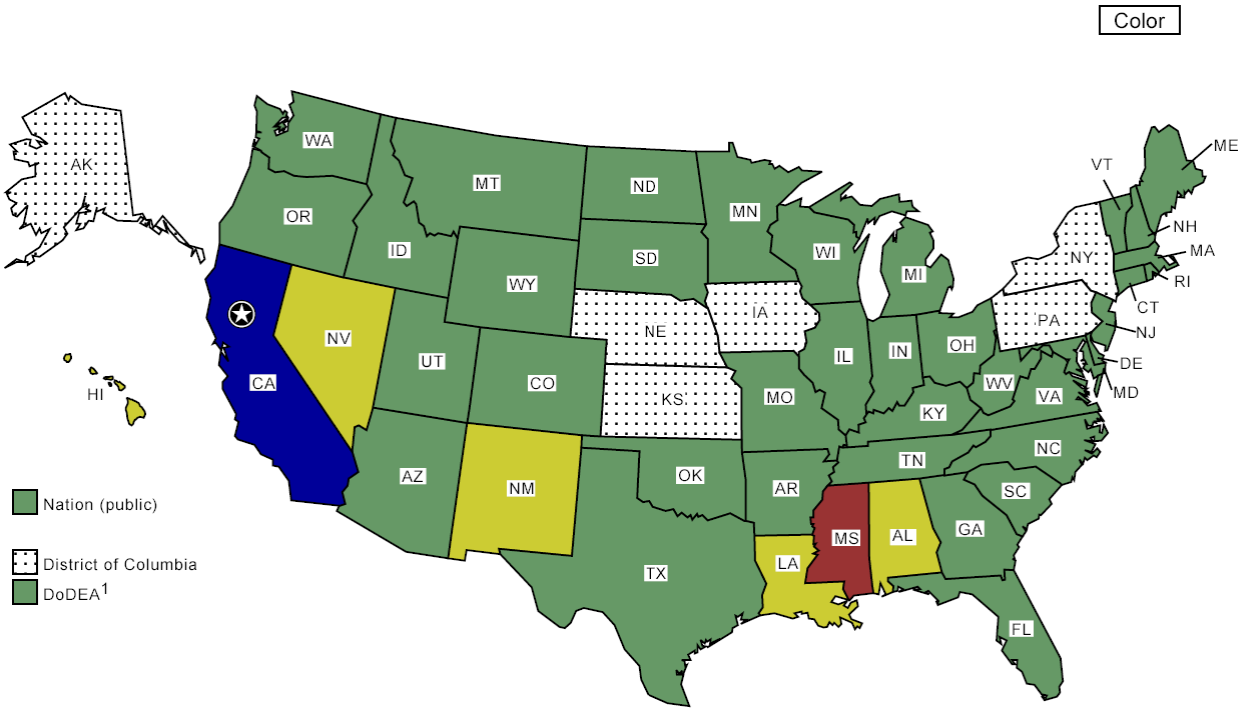
Focal state/jurisdiction (California)
Higher average scale score than California (nation and 42 jurisdictions)
Not significantly different from California (1 jurisdiction)
Lower average scale score than California (1 jurisdiction)
Did not participate or did not meet minimum participation rates.

[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Figure 2-B

The Nation's Report Card 2005 State Assessment

California's average science scale score compared with scores for the nation and other participating jurisdictions, grade 8 public schools: 2005



Focal state/jurisdiction (California)
Higher average scale score than California (nation and 38 jurisdictions)
Not significantly different from California (5 jurisdictions)
Lower average scale score than California (1 jurisdiction)
Did not participate or did not meet minimum participation rates.

[1] Department of Defense Education Activity schools (domestic and overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Comparisons by Achievement Levels

Figures 3-A and 3-B permit comparisons of all jurisdictions participating in the NAEP 2005 science assessment in terms of percentages of grade 4 and grade 8 students performing at or above *Basic*. The participating states and jurisdictions are grouped into categories reflecting whether the percentage of their students performing at or above (including *Proficient* and *Advanced*) was found to be higher than, not significantly different from, or lower than the percentage in California. The states and the nation are ordered by the percentage of students performing at or above *Basic* within each of the three comparison categories.

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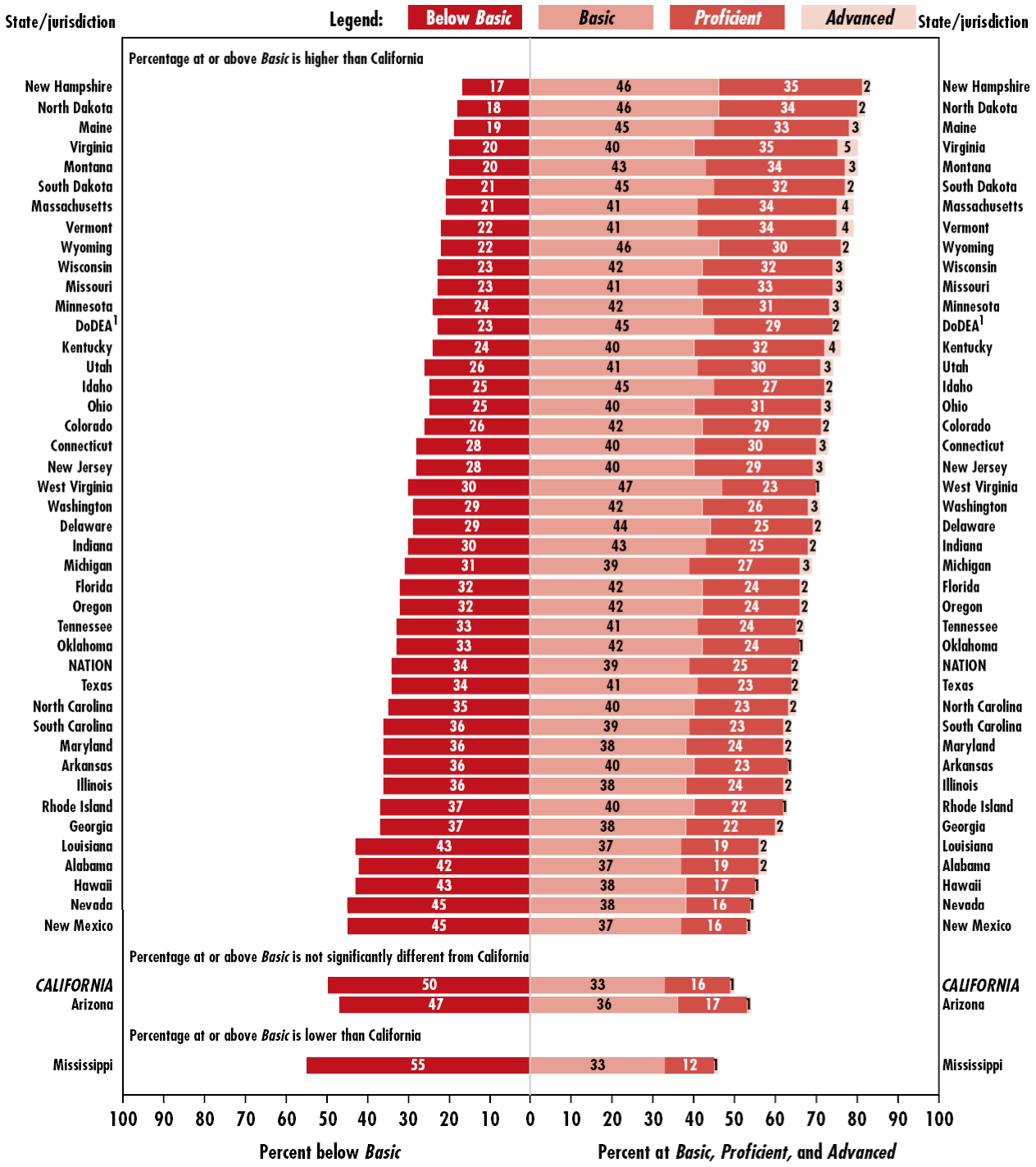
Figure 3-A

Percentage of students within each science achievement level, and California's percentage at or above *Basic* compared with other participating jurisdictions, grade 4 public schools: By state, 2005

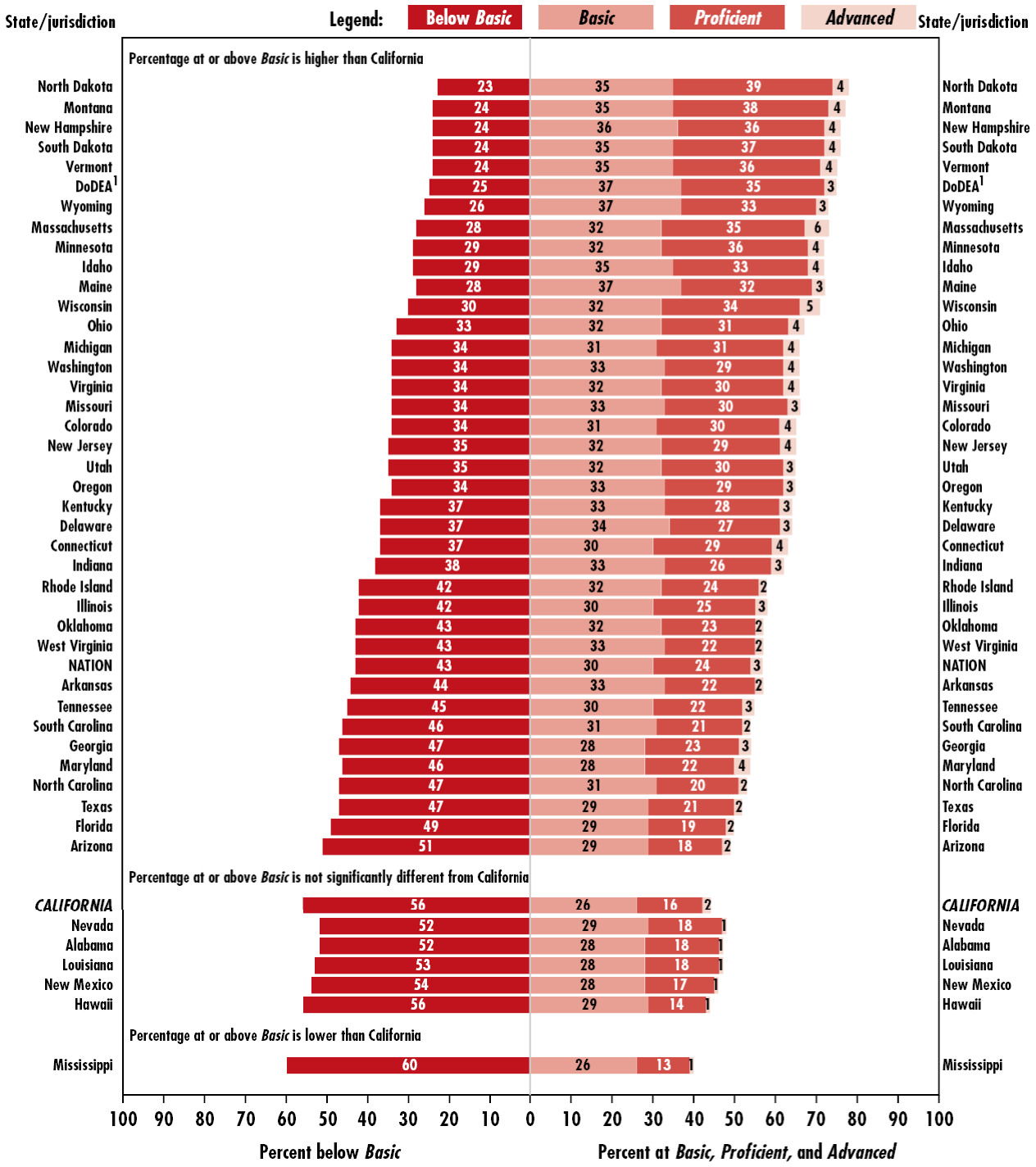


[1] Department of Defense Education Activity schools (domestic and overseas).
NOTE: The bars above contain percentages of students in each NAEP science achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Basic* category begins, so that they may be compared at *Basic* and above. Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

The Nation's Report Card 2005 State Assessment

Figure 3-B

Percentage of students within each science achievement level, and California's percentage at or above *Basic* compared with other participating jurisdictions, grade 8 public schools: By state, 2005



[1] Department of Defense Education Activity schools (domestic and overseas).
NOTE: The bars above contain percentages of students in each NAEP science achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Basic* category begins, so that they may be compared at *Basic* and above. Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Science Performance of Selected Student Groups

This section of the report presents trend results for students in California and the nation by demographic characteristics. Student performance data are reported for

- gender
- race/ethnicity
- student eligibility for free/reduced-price school lunch
- type of location (for 2005 only)
- parents' highest level of education (for 2005 grade 8 only).

Definitions of NAEP reporting groups are available on the NAEP website (http://nces.ed.gov/nationsreportcard/science/results2005/interpret-results.asp#RepGroups).

Each of the variables is reported in tables that present the percentage of students belonging to each group in the first column and the average scale score in the second column. The columns to the right show the percentage of students below *Basic* and at or above each achievement level.

Differences between scores or percentages mentioned in the text are calculated using unrounded values. The result of subtracting the rounded values displayed in the tables may differ (usually by one point) from the results that would be obtained by subtracting the unrounded values.

The reader is cautioned against making causal inferences about the performance of groups of students relative to demographic variables. Many factors other than those discussed here, including home and school factors, may affect student performance.

NAEP collects information on many additional variables, including school and home factors related to achievement. All of this information is in an interactive database available on the NAEP website in the NAEP Data Explorer (http://nces.ed.gov/nationsreportcard/nde/).

Gender

Information on student gender is reported by the student's school when rosters of the students eligible to be assessed are submitted to NAEP.

Tables 3-A and 3-B show average scale scores and achievement-level data for public school students at grades 4 and 8 in California and the nation, by gender. In 2000 only, results were obtained for student samples for which accommodations were permitted and those for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample for which accommodations were permitted.

Grade 4 Scale Score Results by Gender

- In 2005, male students in California had an average score that was higher than that of female students by 3 points. In 2000, there was no significant difference between the average score of male and female students.
- In 2005, male students in California had an average scale score in science (138) that was lower than that of male students in public schools across the nation (151). Similarly, female students in California had an average scale score (135) that was lower than that of female students across the nation (147).
- In California, the average scale scores of both males and females were not found to differ significantly in 2005 from the scores in 2000.

Grade 4 Achievement-Level Results by Gender

- In the 2005 assessment, 19 percent of males and 15 percent of females performed at or above *Proficient* in California. The difference between these percentages was statistically significant.
- The percentage of males in California's public schools who performed at or above *Proficient* in 2005 (19 percent) was smaller than that of males in the nation (30 percent).
- The percentage of females in California's public schools who performed at or above *Proficient* in 2005 (15 percent) was smaller than that of females in the nation (24 percent).
- In California, the percentages of both males and females performing at or above *Proficient* were not found to differ significantly in 2005 from the percentages in 2000.

Table 3-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by gender, grade 4 public schools: 2000 and 2005

Gender		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Male							
2000[1]	Nation (public)	50*	151	33	67	31	5*
	California	50	132*	52	48	16	1
2000	Nation (public)	50	147*	38*	62*	29	4
	California	50	128	55	45	14	1
2005	Nation (public)	51	151	32	68	30	3
	California	50	138	49	51	19	1
Female							
2000[1]	Nation (public)	50*	146	38	62	24	2
	California	50	130	54	46	12	1
2000	Nation (public)	50	143*	41*	59*	23	2
	California	50	130	55	45	12	1
2005	Nation (public)	49	147	36	64	24	2
	California	50	135	51	49	15	1

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

NOTE: The NAEP grade 4 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Grade 8 Scale Score Results by Gender

- In 2005, male students in California had an average score that was higher than that of female students by 3 points. In 1996, there was no significant difference between the average score of male and female students.
- In 2005, male students in California had an average scale score in science (138) that was lower than that of male students in public schools across the nation (149). Similarly, female students in California had an average scale score (135) that was lower than that of female students across the nation (145).
- In California, the average scale scores of both males and females were not found to differ significantly in 2005 from the scores in 1996.
- In California, the average scale scores of both males and females were higher in 2005 than in 2000.

Grade 8 Achievement-Level Results by Gender

- In the 2005 assessment, 19 percent of males and 17 percent of females performed at or above *Proficient* in California. The difference between these percentages was not significant.
- The percentage of males in California's public schools who performed at or above *Proficient* in 2005 (19 percent) was smaller than that of males in the nation (30 percent).
- The percentage of females in California's public schools who performed at or above *Proficient* in 2005 (17 percent) was smaller than that of females in the nation (25 percent).
- In California, the percentages of both males and females performing at or above *Proficient* were not found to differ significantly in 2005 from the percentages in 1996.
- In California, the percentages of both males and females performing at or above *Proficient* were not found to differ significantly in 2005 from the percentages in 2000.

Table 3-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by gender, grade 8 public schools: 1996, 2000, and 2005

Gender		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Male							
1996[1]	Nation (public)	51	149	40	60	29	3
	California	49	140	50	50	21	2
2000[1]	Nation (public)	51	153*	38*	62*	35*	5
	California	47*	136	56	44	18	1
2000	Nation (public)	50	151	40	60	32	5
	California	48	131*	60*	40*	16	1
2005	Nation (public)	50	149	41	59	30	4
	California	50	138	54	46	19	2
Female							
1996[1]	Nation (public)	49	148	41	59	25	2
	California	51	136	56	44	18	1
2000[1]	Nation (public)	49	146	45	55	26	3
	California	53*	129*	63*	37*	13	1
2000	Nation (public)	50	145	46	54	25	3
	California	52	126*	64*	36*	13	1
2005	Nation (public)	50	145	45	55	25	2
	California	50	135	57	43	17	1

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2005 Science Assessments.

Race/Ethnicity

Schools reported the racial/ethnic subgroup that best described the students eligible to be assessed. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Tables 4-A and 4-B show average scale scores and achievement-level data for public school students at grades 4 and 8 in California and the nation, by race/ethnicity. In 2000 only, results were obtained for student samples for which accommodations were permitted and those for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample for which accommodations were permitted.

Grade 4 Scale Score Results by Race/Ethnicity

- In 2005, White students in California had an average scale score that was higher than those of Black, Hispanic, and American Indian/Alaska Native students, but was not found to be significantly different from that of Asian/Pacific Islander students.
- The average scale score of White students in California was higher in 2005 than in 2000. The average scale scores of Black, Hispanic, and Asian/Pacific Islander students in California were not significantly different between 2000 and 2005.
- In 2005, Black students had an average score that was lower than that of White students by 34 points. In 2000, the average score for Black students was lower than that of White students by 32 points.
- In 2005, Hispanic students had an average score that was lower than that of White students by 32 points. In 2000, the average score for Hispanic students was lower than that of White students by 39 points.

Grade 4 Achievement-Level Results by Race/Ethnicity

- In California in 2005, the percentage of White students performing at or above *Proficient* was greater than those of Black, Hispanic, and American Indian/Alaska Native students, but was not found to be significantly different from that of Asian/Pacific Islander students.
- The respective percentages of White and Asian/Pacific Islander students in California performing at or above *Proficient* were greater in 2005 than in 2000. The differences between the percentages of Black and Hispanic students in California performing at or above *Proficient* in 2000 and the respective percentages in 2005 were not found to be significant.

Table 4-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 4 public schools: 2000 and 2005

Race/ethnicity		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
White							
2000[1]	Nation (public)	67*	159*	22*	78*	37	5*
	California	39*	149*	30	70	25*	2
2000	Nation (public)	61*	158*	24*	76*	36	5
	California	37	149*	31	69	25*	1
2005	Nation (public)	57	161	18	82	38	3
	California	30	156	25	75	33	3
Black							
2000[1]	Nation (public)	17	122*	69*	31*	6	#
	California	12	118	72	28	5	#
2000	Nation (public)	17	121*	70*	30*	6	#
	California	11	117	72	28	5	#
2005	Nation (public)	17	128	62	38	7	#
	California	8	122	68	32	6	#
Hispanic							
2000[1]	Nation (public)	11*	125*	63*	37*	9	#
	California	35*	114*	74*	26*	4	#
2000	Nation (public)	16*	121*	67*	33*	7	#
	California	40*	110	77*	23*	4	#
2005	Nation (public)	20	132	56	44	10	#
	California	49	124	67	33	6	#
Asian/Pacific Islander							
2000[1]	Nation (public)	‡	‡	‡	‡	‡	‡
	California	12	136*	46*	54*	18*	1
2000	Nation (public)	‡	‡	‡	‡	‡	‡
	California	11	140	41	59	18*	1
2005	Nation (public)	4	156	26	74	34	5
	California	10	153	31	69	32	4

See notes at end of table.

Table 4-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 4 public schools: 2000 and 2005—Continued

Race/ethnicity		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
American Indian/Alaska Native							
2000[1]	Nation (public)	1*	‡	‡	‡	‡	‡
	California	1	‡	‡	‡	‡	‡
2000	Nation (public)	1	135	47	53	18	1
	California	1	‡	‡	‡	‡	‡
2005	Nation (public)	1	139	47	53	15	1
	California	1	135	55	45	15	1
Unclassified[2]							
2000[1]	Nation (public)	#*	149	35	65	24	1
	California	2	‡	‡	‡	‡	‡
2000	Nation (public)	1	148	37	63	24	2
	California	1	‡	‡	‡	‡	‡
2005	Nation (public)	1	151	32	68	25	2
	California	1	147	36	64	21	#

Estimate rounds to zero.
‡ Reporting standards are not met.
* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

[2] "Unclassified" students are those whose school-reported race was "other" or "unavailable," or was missing, and who self-reported more than one race category or none. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

NOTE: The NAEP grade 4 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Grade 8 Scale Score Results by Race/Ethnicity

- In 2005, White students in California had an average scale score that was higher than those of Black, Hispanic, and American Indian/Alaska Native students, but was not found to be significantly different from that of Asian/Pacific Islander students.
- The average scale scores of White, Black, Hispanic, and Asian/Pacific Islander students in California were not significantly different between 1996 and 2005.
- The average scale scores of White, Hispanic, and Asian/Pacific Islander students in California were higher in 2005 than in 2000. The average scale score of Black students in California was not significantly different between 2000 and 2005.
- In 2005, Black students had an average score that was lower than that of White students by 34 points. In 1996, the average score for Black students was lower than that of White students by 29 points.
- In 2005, Hispanic students had an average score that was lower than that of White students by 32 points. In 1996, the average score for Hispanic students was lower than that of White students by 34 points.

Grade 8 Achievement-Level Results by Race/Ethnicity

- In California in 2005, the percentage of White students performing at or above *Proficient* was greater than those of Black, Hispanic, and American Indian/Alaska Native students, but was not found to be significantly different from that of Asian/Pacific Islander students.
- The differences between the percentages of White, Black, Hispanic, and Asian/Pacific Islander students in California performing at or above *Proficient* in 1996 and the respective percentages in 2005 were not found to be significant.
- The percentage of Hispanic students in California performing at or above *Proficient* was greater in 2005 than in 2000. The differences between the percentages of White, Black, and Asian/Pacific Islander students in California performing at or above *Proficient* in 2000 and the respective percentages in 2005 were not found to be significant.

Table 4-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 8 public schools: 1996, 2000, and 2005

Race/ethnicity		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
White							
1996[1]	Nation (public)	71*	158	29	71	35	4
	California	41*	154	33	67	31	2
2000[1]	Nation (public)	69*	159	29	71	39	5
	California	37	148*	40	60	25	2
2000	Nation (public)	64*	159	29	71	38	5
	California	35	147*	41	59	25	2
2005	Nation (public)	60	159	28	72	38	4
	California	32	154	34	66	32	3
Black							
1996[1]	Nation (public)	16*	119	78*	22*	4*	#
	California	9	125	69	31	10	#
2000[1]	Nation (public)	15*	120	76	24	6	#
	California	8	119	78	22	6	#
2000	Nation (public)	17	120	76	24	6	#
	California	9	111	78	22	5	#
2005	Nation (public)	17	123	73	27	7	#
	California	8	120	74	26	6	#
Hispanic							
1996[1]	Nation (public)	9*	128	65	35	10	#
	California	34*	120	76	24	6	#
2000[1]	Nation (public)	11*	125	69	31	9	1
	California	40	116	79	21	4	#
2000	Nation (public)	14*	125	69	31	9	1
	California	42	112*	81*	19*	4*	#
2005	Nation (public)	17	127	67	33	10	#
	California	45	122	73	27	7	#
Asian/Pacific Islander							
1996[1]	Nation (public)	2*	148	43	57	27	2
	California	13	144	47	53	26	3
2000[1]	Nation (public)	3*	151	43	57	32	5
	California	13	143	49	51	26	2
2000	Nation (public)	4	152	41	59	34	6
	California	12	142*	48	52	25	2
2005	Nation (public)	4	155	35	65	34	6
	California	13	152	38	62	30	5

See notes at end of table.

Table 4-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 8 public schools: 1996, 2000, and 2005—Continued

Race/ethnicity		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
American Indian/Alaska Native							
1996[1]	Nation (public)	1	146	50	50	23	3
	California	1	‡	‡	‡	‡	‡
2000[1]	Nation (public)	1	140	54	46	21	3
	California	1	‡	‡	‡	‡	‡
2000	Nation (public)	1	146	49	51	26	6
	California	1	‡	‡	‡	‡	‡
2005	Nation (public)	1	134	59	41	15	1
	California	1	132	57	43	16	#
Unclassified[2]							
1996[1]	Nation (public)	#	‡	‡	‡	‡	‡
	California	2	‡	‡	‡	‡	‡
2000[1]	Nation (public)	#*	‡	‡	‡	‡	‡
	California	1	‡	‡	‡	‡	‡
2000	Nation (public)	#*	‡	‡	‡	‡	‡
	California	1	‡	‡	‡	‡	‡
2005	Nation (public)	1	149	41	59	28	4
	California	1	139	56	44	20	1

Estimate rounds to zero.
‡ Reporting standards are not met.
* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] "Unclassified" students are those whose school-reported race was "other" or "unavailable," or was missing, and who self-reported more than one race category or none. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2005 Science Assessments.

Student Eligibility for Free/Reduced-Price School Lunch

NAEP collects data on eligibility for the federal program providing free or reduced-price school lunches. The free/reduced-price lunch component of the National School Lunch Program (NSLP) offered through the U.S. Department of Agriculture (USDA) is designed to ensure that children near or below the poverty line receive nourishing meals. Eligibility is determined through the USDA's Income Eligibility Guidelines, and results for this category of students are included as an indicator of lower family income.

Tables 5-A and 5-B show average scale scores and achievement-level data for public school students at grades 4 and 8 in California and the nation, by eligibility for free/reduced-price lunch. In 2000 only, results were obtained for student samples for which accommodations were permitted and those for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample for which accommodations were permitted.

Grade 4 Scale Score Results by Free/Reduced-Price Lunch Eligibility

- In 2005, students in California eligible for free/reduced-price lunch had an average science scale score of 123. This was lower than that of students in California not eligible for this program (154).
- In 2005, students who were eligible for free/reduced-price school lunch had an average score that was lower than that of students who were not eligible for free/reduced-price school lunch by 31 points. In 2000, the average score for students who were eligible for free/reduced-price school lunch was lower than the score of those not eligible by 40 points.
- Students in California eligible for free/reduced-price lunch had an average scale score (123) in 2005 that was lower than that of students in the nation who were eligible (135).
- In California, students eligible for free/reduced-priced lunch had an average science scale score in 2005 (123) that was not significantly different from that of eligible students in 2000 (111).

Grade 4 Achievement-Level Results by Free/Reduced-Price Lunch Eligibility

- In California in 2005, 6 percent of students who were eligible for free/reduced-price lunch and 31 percent of those who were not eligible for this program performed at or above *Proficient*. These percentages were found to be significantly different from one another.
- For students in California in 2005 who were eligible for free/reduced-price lunch, the percentage at or above *Proficient* (6 percent) was smaller than the corresponding percentage for their counterparts around the nation (12 percent).
- In California, the percentage of students eligible for free/reduced-price lunch who performed at or above *Proficient* for 2005 (6 percent) was not significantly different from the corresponding percentage (4 percent) for 2000.

Table 5-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by eligibility for free/reduced-price school lunch, grade 4 public schools: 2000 and 2005

Eligibility status		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Eligible							
2000[1]	Nation (public)	37*	129*	58*	42*	11	1
	California	50	115*	72	28	4	#
2000	Nation (public)	41*	126*	61*	39*	10*	#
	California	52	111	75*	25*	4	#
2005	Nation (public)	45	135	53	47	12	#
	California	55	123	67	33	6	#
Not eligible							
2000[1]	Nation (public)	51	159*	22*	78*	37	5
	California	40	150	31	69	26	2
2000	Nation (public)	48*	158*	24*	76*	37	5
	California	38	151	29	71	25	1
2005	Nation (public)	53	162	18	82	40	4
	California	41	154	28	72	31	3
Information not available							
2000[1]	Nation (public)	12*	160*	22*	78*	39*	6
	California	11	137	48	52	16	1
2000	Nation (public)	11*	158*	24*	76*	38*	6
	California	10	138	48	52	16	1
2005	Nation (public)	2	148	36	64	27	2
	California	4	149	36	64	28	2

Estimate rounds to zero.

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

NOTE: The NAEP grade 4 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Grade 8 Scale Score Results by Free/Reduced-Price Lunch Eligibility

- In 2005, students in California eligible for free/reduced-price lunch had an average science scale score of 121. This was lower than that of students in California not eligible for this program (150).
- In 2005, students who were eligible for free/reduced-price school lunch had an average score that was lower than that of students who were not eligible for free/reduced-price school lunch by 29 points. In 1996, the average score for students who were eligible for free/reduced-price school lunch was lower than the score of those not eligible by 32 points.
- Students in California eligible for free/reduced-price lunch had an average scale score (121) in 2005 that was lower than that of students in the nation who were eligible (130).
- In California, students eligible for free/reduced-priced lunch had an average science scale score in 2005 (121) that was not significantly different from that of eligible students in 1996 (120).
- In California, students eligible for free/reduced-priced lunch had an average science scale score in 2005 (121) that was higher than that of eligible students in 2000 (110).

Grade 8 Achievement-Level Results by Free/Reduced-Price Lunch Eligibility

- In California in 2005, 7 percent of students who were eligible for free/reduced-price lunch and 28 percent of those who were not eligible for this program performed at or above *Proficient*. These percentages were found to be significantly different from one another.
- For students in California in 2005 who were eligible for free/reduced-price lunch, the percentage at or above *Proficient* (7 percent) was smaller than the corresponding percentage for their counterparts around the nation (12 percent).
- In California, the percentage of students eligible for free/reduced-price lunch who performed at or above *Proficient* for 2005 (7 percent) was not significantly different from the corresponding percentage (6 percent) for 1996.
- In California, the percentage of students eligible for free/reduced-price lunch who performed at or above *Proficient* for 2005 (7 percent) was greater than the corresponding percentage (4 percent) for 2000.

Table 5-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by eligibility for free/reduced-price school lunch, grade 8 public schools: 1996, 2000, and 2005

Eligibility status		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Eligible							
1996[1]	Nation (public)	29*	133	60	40	14	1
	California	36*	120	74	26	6	#
2000[1]	Nation (public)	27*	127*	67*	33*	12	1
	California	34*	113*	81*	19*	4	#
2000	Nation (public)	29*	127*	68*	32*	11	1
	California	34	110*	82*	18*	4*	#
2005	Nation (public)	39	130	63	37	12	1
	California	44	121	73	27	7	#
Not eligible							
1996[1]	Nation (public)	51	155	32	68	32*	3
	California	47	152	36	64	31	3
2000[1]	Nation (public)	55	160	29	71	39	5
	California	48	145*	46	54	23	2
2000	Nation (public)	54*	158	30	70	38	5
	California	50	139*	51*	49*	20*	1*
2005	Nation (public)	58	158	29	71	38	4
	California	51	150	40	60	28	3
Information not available							
1996[1]	Nation (public)	20*	154	33	67	34	4
	California	17*	137	56	44	15	1
2000[1]	Nation (public)	18*	151	40	60	31	3
	California	19*	135	57	43	17	2
2000	Nation (public)	17*	150	41	59	30	4
	California	16	136	54	46	19	2
2005	Nation (public)	3	147	44	56	26	3
	California	5	135	58	42	13	1

Estimate rounds to zero.

* Value is significantly different from the value for the same jurisdiction in 2005.

[1] Accommodations were not permitted for this assessment.

NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2005 Science Assessments.

Type of Location

Schools that participated in the assessment were classified as being located in three mutually exclusive types of community: central city, urban fringe/large town, and rural/small town. These categories indicate the geographic locations of schools. "Central city" is geographical term meaning the largest city of a Metropolitan Statistical Area and is not synonymous with "inner city." The criteria for classifying schools with respect to type of location changed for 2005; therefore, comparisons with prior years are not provided.

Tables 6-A and 6-B show average scale scores and achievement-level data for public school students at grades 4 and 8 in California and the nation, by type of location.

Grade 4 Scale Score Results by Type of Location

- In 2005, in California, the average scale score of students attending schools in central city locations was lower than those of students in urban fringe and rural schools.
- In 2005, students attending public schools in central city locations in California had an average scale score (135) that was lower than the average scale score of students in central city locations in the nation (141).
- In 2005, students attending public schools in urban fringe locations in California had an average scale score (138) that was lower than the average scale score of students in urban fringe locations in the nation (153).
- In 2005, students attending public schools in rural locations in California had an average scale score (148) that was not significantly different from the average scale score of students in rural locations in the nation (153).

Grade 4 Achievement-Level Results by Type of Location

- In 2005, the percentage of students in California's public schools in central city locations who performed at or above *Proficient* was smaller than the corresponding percentage for students in rural schools, but was not found to be significantly different from the corresponding percentage of students in urban fringe schools.
- The percentage of students in California's public schools in central city locations who performed at or above *Proficient* (16) in 2005 was smaller than that of students in central city locations in the nation (19).
- The percentage of students in California's public schools in urban fringe locations who performed at or above *Proficient* (17) in 2005 was smaller than that of students in urban fringe locations in the nation (31).
- The percentage of students in California's public schools in rural locations who performed at or above *Proficient* (27) in 2005 was not significantly different from that of students in rural locations in the nation (30).

Table 6-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by type of location, grade 4 public schools: 2005

Type of location		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Central city							
2005	Nation (public)	31*	141*	46*	54*	19*	2
	California	45	135	53	47	16	2
Urban fringe							
2005	Nation (public)	44*	153*	29*	71*	31*	3*
	California	50	138	49	51	17	1
Rural							
2005	Nation (public)	25*	153	28	72	30	2
	California	5	148	36	64	27	2

* Value is significantly different from the value for California.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Grade 8 Scale Score Results by Type of Location

- In 2005, in California, the average scale score of students attending schools in central city locations was lower than those of students in urban fringe and rural schools.
- In 2005, students attending public schools in central city locations in California had an average scale score (133) that was lower than the average scale score of students in central city locations in the nation (138).
- In 2005, students attending public schools in urban fringe locations in California had an average scale score (138) that was lower than the average scale score of students in urban fringe locations in the nation (151).
- In 2005, students attending public schools in rural locations in California had an average scale score (144) that was lower than the average scale score of students in rural locations in the nation (152).

Grade 8 Achievement-Level Results by Type of Location

- In 2005, the percentage of students in California's public schools in central city locations who performed at or above *Proficient* was not found to be significantly different from the corresponding percentages of students in urban fringe and rural schools.
- The percentage of students in California's public schools in central city locations who performed at or above *Proficient* (17) in 2005 was smaller than that of students in central city locations in the nation (20).
- The percentage of students in California's public schools in urban fringe locations who performed at or above *Proficient* (18) in 2005 was smaller than that of students in urban fringe locations in the nation (31).
- The percentage of students in California's public schools in rural locations who performed at or above *Proficient* (23) in 2005 was smaller than that of students in rural locations in the nation (30).

Table 6-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by type of location, grade 8 public schools: 2005

Type of location		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Central city							
2005	Nation (public)	29*	138*	54*	46*	20*	2
	California	45	133	59	41	17	2
Urban fringe							
2005	Nation (public)	43*	151*	39*	61*	31*	4*
	California	48	138	54	46	18	2
Rural							
2005	Nation (public)	28*	152*	37*	63*	30*	3
	California	7	144	47	53	23	2

* Value is significantly different from the value for California.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Parents' Highest Level of Education

Eighth-grade students who participated in the NAEP 2005 assessment were asked to indicate the highest level of education they thought their father and their mother had completed. Five response options–did not finish high school, graduated from high school, some education after high school, graduated from college, and "I don't know"–were offered. The highest level of education reported for either parent was used in the analysis of this question. Fourth-graders are no longer asked this question because their responses in previous NAEP assessments were unreliable, and a large percentage of them chose the "I don't know" option.

Grade 8 Scale Score Results by Parents' Highest Level of Education

- In 2005, students in California who reported that a parent had graduated from college had an average scale score that was higher than the average scores of students with a parent in any of the following categories: did not finish high school, graduated from high school, and some education after high school.

Grade 8 Achievement-Level Results by Parents' Highest Level of Education

- In 2005, the percentage of students performing at or above *Proficient* in California who reported that a parent had graduated from college was higher than the percentage for students whose parents' highest level of education was in any of the following categories: did not finish high school, graduated from high school, and some education after high school.

Table 7

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by parents' highest level of education, grade 8 public schools: 2005

Highest level of education		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Did not finish high school							
2005	Nation (public)	8*	128*	67*	33*	9*	#
	California	12	119	77	23	5	#
Graduated from high school							
2005	Nation (public)	18*	138*	54*	46*	16*	1
	California	15	127	68	32	9	#
Some education after high school							
2005	Nation (public)	18*	151*	37*	63*	28*	2*
	California	17	142	49	51	18	1
Graduated from college							
2005	Nation (public)	45*	158*	30*	70*	39*	5*
	California	38	151	37	63	32	4
Unknown							
2005	Nation (public)	11*	129*	64*	36*	11*	1
	California	18	118	75	25	6	#

Estimate rounds to zero.
* Value is significantly different from the value for California.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Toward a More Inclusive NAEP: Students With Disabilities and English Language Learners

It is important to assess all students selected in the randomized sampling process, including students with disabilities (SD) and students who are classified by their schools as English language learners (ELL). Some students sampled for participation in NAEP can be excluded from the sample according to carefully defined criteria. School personnel, guided by the student's Individualized Education Program (IEP), as well as eligibility for Section 504 services, make decisions regarding inclusion of students with disabilities in the assessment. They also make decisions regarding inclusion of English language learners, based on NAEP's guidelines, by evaluating the student's capability of participating in the assessment given the available accommodations, and taking into consideration the number of years the student has been receiving instruction in English. The results displayed in this report and in other publications of the NAEP 2005 science results are based on representative samples that include SD and ELL students who were assessed either with or without accommodations, based on NAEP's guidelines.

Percentages of students excluded from NAEP may vary considerably across states, and, within a state, across years. Comparisons of results across states and within a state across years should be interpreted with caution if the exclusion rates vary widely. The percentages of assessed students classified as SD or ELL, as well as their NAEP performance in each participating state and jurisdiction, are available in an interactive database at the NAEP website (http://nces.ed.gov/nationsreportcard/nde/).

Prior to 2000, no testing accommodations were made available to the samples of students with disabilities and the English language learners in state NAEP science assessments that served as the basis for reported results. In the 1996 national and 2000 national and state science assessments, NAEP researchers drew a second representative sample of schools. Accommodations were made available for students in this sample who required them, provided the accommodation did not change the nature of what was tested. For example, students could be assessed one-on-one or in small groups, receive extended time, or use a large-print test book. In science, students had the option of having the test questions read aloud in English, an English-Spanish glossary (in 2000), or using a bilingual English-Spanish test book (in 2005). NAEP has used these comparable samples to study the effects of allowing accommodations for students categorized as SD or ELL in the assessments. A series of technical research papers covering various NAEP subject areas has been published with the results of these comparisons (see http://nces.ed.gov/nationsreportcard/about/inclusion.asp #research).

Tables 8-A and 8-B display the percentages of students with disabilities and English language learners in California identified, excluded, and assessed under standard and accommodated conditions at grades 4 and 8. The percentages in these tables are based on the total NAEP sample, including students who were excluded or not assessed.

Tables 9-A and 9-B show the percentage of students assessed in California by disability status and their performance on the NAEP assessment in terms of average scale scores and percentages performing below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced* for grades 4 and 8. The denominator for the percentages in these tables is the total number of students assessed.

Tables 10-A and 10-B present the percentage of students assessed in California by ELL status, their average scale scores, and their performance in terms of the percentage below *Basic*, the percentages at or above *Basic*, at or above *Proficient*, and at *Advanced*.

Table 11 presents the total number of students assessed, the percentage of students sampled who were excluded, and average scale scores for all participating states and other jurisdictions.

Table 8-A

The Nation's Report Card 2005 State Assessment

Percentage of all students in science assessments identified as SD and ELL, excluded, and assessed, grade 4 public schools: 2000 and 2005

Year and testing status	SD and/or ELL		SD		ELL	
	California	Nation	California	Nation	California	Nation
2000[1] Identified	33	16	9	11	26	6
Excluded	11	8	5	6	8	2
Assessed under standard conditions	22	8	4	5	18	3
2000 Identified	33	19	9	12	26	8
Excluded	5	5	2	3	3	2
Assessed under standard conditions	19	10	5	5	15	5
Assessed with accommodations	9	4	1	3	9	1
2005 Identified	38	22	10	14	32	10
Excluded	4	3	2	3	3	1
Assessed under standard conditions	29	9	4	4	26	6
Assessed with accommodations	4	10	3	7	2	3

NOTE: SD = students with disabilities. ELL = English language learners. Detail may not sum to totals because of rounding. Some students were identified as both SD and ELL. Such students would be included in both the SD and ELL portions of the table.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

The Nation's Report Card 2005 State Assessment

Table 8-B

Percentage of all students in science assessments identified as SD and ELL, excluded, and assessed, grade 8 public schools: 1996, 2000, and 2005

Year and testing status	SD and/or ELL		SD		ELL	
	California	Nation	California	Nation	California	Nation
1996[1] Identified	21	13	7	10	15	3
Excluded	9	5	4	4	6	1
Assessed under standard conditions	12	8	3	6	9	2
2000[1] Identified	26	16	10	12	19	4
Excluded	9	7	7	6	5	2
Assessed under standard conditions	16	8	3	6	14	2
2000 Identified	26	13	10	10	19	4
Excluded	4	4	2	3	2	1
Assessed under standard conditions	18	7	5	5	14	3
Assessed with accommodations	4	2	3	2	2	#
2005 Identified	28	18	9	13	22	6
Excluded	3	3	2	3	2	1
Assessed under standard conditions	21	7	4	3	18	4
Assessed with accommodations	4	9	3	7	2	1

[1] Accommodations were not permitted for this assessment.

Estimate rounds to zero.

NOTE: SD = students with disabilities. ELL = English language learners. Detail may not sum to totals because of rounding. Some students were identified as both SD and ELL. Such students would be included in both the SD and ELL portions of the table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2005 Science Assessments.

Table 9-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by students' disability status, grade 4 public schools: 2000 and 2005

Student disability status		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Yes							
2000	Nation (public)	9*	119*	65*	35*	11	1
	California	6	102*	81	19	3	#
2005	Nation (public)	11	133	55	45	13	1
	California	8	116	72	28	7	#
No							
2000	Nation (public)	91*	148*	37*	63*	27	3
	California	94	131*	53	47	14	1
2005	Nation (public)	89	151	31	69	29	2
	California	92	139	48	52	18	1

Estimate rounds to zero.
* Value is significantly different from the value for the same jurisdiction in 2005.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Table 9-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by students' disability status, grade 8 public schools: 2000 and 2005

Student disability status		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Yes							
2000	Nation (public)	7*	117	75	25	8	1
	California	8	87*	94	6	1	#
2005	Nation (public)	11	120	73	27	8	#
	California	7	101	86	14	4	#
No							
2000	Nation (public)	93*	150	40	60	30	4
	California	92	132*	60*	40*	15*	1
2005	Nation (public)	89	151	39	61	30	3
	California	93	139	53	47	19	2

Estimate rounds to zero.
* Value is significantly different from the value for the same jurisdiction in 2005.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

The Nation's Report Card 2005 State Assessment

Table 10-A

Average science scale scores and percentage of students at or above each achievement level, by students' classification as English language learners (ELL), grade 4 public schools: 2000 and 2005

ELL status		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Yes							
2000	Nation (public)	6*	102*	87*	13*	2*	#
	California	24*	98	84	16	3	#
2005	Nation (public)	9	120	72	28	4	#
	California	30	115	79	21	3	#
No							
2000	Nation (public)	94*	148*	36*	64*	28	3
	California	76*	139*	46*	54*	17*	1
2005	Nation (public)	91	152	30	70	29	3
	California	70	146	38	62	24	2

Estimate rounds to zero.
* Value is significantly different from the value for the same jurisdiction in 2005.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 137 or lower; *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

The Nation's Report Card 2005 State Assessment

Table 10-B

Average science scale scores and percentage of students at or above each achievement level, by students' classification as English language learners (ELL), grade 8 public schools: 2000 and 2005

ELL status		Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Yes							
2000	Nation (public)	3*	102	89	11	3	#
	California	17*	95*	93	7	1	#
2005	Nation (public)	5	107	86	14	3	#
	California	21	106	87	13	3	#
No							
2000	Nation (public)	97*	149	41	59	30	4
	California	83*	136*	56*	44*	17*	1
2005	Nation (public)	95	149	40	60	29	3
	California	79	144	47	53	22	2

Estimate rounds to zero.
* Value is significantly different from the value for the same jurisdiction in 2005.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP science scale: below *Basic*, 142 or lower; *Basic*, 143–169; *Proficient*, 170–207; and *Advanced*, 208 and above. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 Science Assessments.

Table 11

The Nation's Report Card 2005 State Assessment

Total number of students assessed, percentage of all students who were excluded, and average science scale scores, grades 4 and 8 public schools: By state, 2005

State/jurisdiction	Grade 4			Grade 8		
	Number assessed	Percentage excluded	Average scale score	Number assessed	Percentage excluded	Average scale score
Alabama	2,600	2	142	2,300	2	138
Arizona	2,800	5	139	2,800	4	140
Arkansas	2,800	3	147	2,800	3	144
California	10,600	4	137	9,900	3	136
Colorado	2,700	3	155	2,500	2	155
Connecticut	2,800	3	155	2,700	3	152
Delaware	2,600	5	152	2,700	7	152
Florida	4,400	3	150	3,900	4	141
Georgia	4,200	2	148	3,900	2	144
Hawaii	2,800	3	142	2,700	3	136
Idaho	2,900	2	155	2,900	2	158
Illinois	4,100	3	148	4,000	3	148
Indiana	2,700	2	152	2,700	3	150
Kentucky	2,800	2	158	2,900	3	153
Louisiana	2,700	2	143	2,400	3	138
Maine	2,600	3	160	2,500	3	158
Maryland	2,800	2	149	2,600	2	145
Massachusetts	3,900	4	160	3,600	4	161
Michigan	2,500	4	152	2,400	4	155
Minnesota	2,600	2	156	2,500	3	158
Mississippi	2,800	3	133	2,700	3	132
Missouri	2,700	3	158	2,800	3	154
Montana	2,700	2	160	2,700	3	162
Nevada	2,900	4	140	2,800	3	138
New Hampshire	2,600	2	161	2,500	2	162
New Jersey	2,800	3	154	2,600	4	153
New Mexico	2,800	3	141	2,700	3	138
North Carolina	4,100	3	149	4,000	3	144
North Dakota	2,200	3	160	2,500	3	163
Ohio	3,500	4	157	3,400	4	155
Oklahoma	2,700	4	150	2,600	3	147
Oregon	2,700	4	151	2,600	3	153
Rhode Island	2,700	3	146	2,800	3	146
South Carolina	2,800	4	148	2,700	4	145
South Dakota	2,800	1	158	2,800	2	161
Tennessee	2,800	3	150	2,500	3	145
Texas	8,300	7	150	8,100	5	143
Utah	2,900	3	155	2,900	2	154
Vermont	2,000	3	160	2,300	3	162
Virginia	2,800	3	161	2,700	3	155
Washington	2,800	3	153	2,700	3	154
West Virginia	2,700	2	151	2,600	2	147
Wisconsin	2,600	3	158	2,600	4	158
Wyoming	1,800	2	157	2,100	2	159
Other jurisdiction						
DoDEA[1]	2,400	2	156	1,800	1	160

[1] Department of Defense Education Activity schools (domestic and overseas).

NOTE: The NAEP science scale ranges from 0 to 300. Sample sizes are rounded to the nearest hundred.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Where to Find More Information

The NAEP Science Assessment
The latest news about the NAEP 2005 science assessment and the national results can be found on the NAEP website at http://nces.ed.gov/nationsreportcard/science/results/. The individual snapshot reports for each participating state and other jurisdictions are also available in the state results section of the website at http://nces.ed.gov/nationsreportcard/states/.

The Nation's Report Card: Science 2005 may be ordered or downloaded at the NAEP website.

The *Science Framework for the 2005 National Assessment of Educational Progress*, on which this assessment is based, is available at the National Assessment Governing Board website (http://www.nagb.org/pubs/s_framework_05/761907-ScienceFramework.pdf).

Additional Results from the Science Assessment
For more findings from the 2005 science assessments, refer to the NAEP 2005 results at http://nces.ed.gov/nationsreportcard/nde/. The interactive database at this site includes student, teacher, and school variables for all participating states and other jurisdictions, the nation, and the four regions. Data tables are also available for each jurisdiction, with all background questions cross-tabulated with the major demographic variables. Users can design and create tables and can perform tests of statistical significance at this website.

Technical Documentation
For explanations of NAEP's general survey procedures, see: Allen, N.L., Donoghue, J.R., and Schoeps, T.L. (2001). *The NAEP 1998 Technical Report*. (NCES 2001–509). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics. Technical information for NAEP assessments may also be found on the NAEP website at (http://nces.ed.gov/nationsreportcard/science/results2003/interpret-results.asp).

Publications on the inclusion of students with disabilities and limited-English-proficient students
Olson, J.F., and Goldstein, A.A. (1997). *The Inclusion of Students With Disabilities and Limited-English-Proficient Students in Large-Scale Assessments: A Summary of Recent Progress* (NCES 97–482). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

Mazzeo, J., Carlson, J.E., Voelkl, K.E., and Lutkus, A.D. (2000). *Increasing the Participation of Special-Needs Students in NAEP: A Report on 1996 Research Activities* (NCES 2000–473). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

Lutkus, A.D., and Mazzeo, J. (2003). *Including Special-Needs Students in the NAEP 1998 Reading Assessment, Part I: Comparison of Overall Results With and Without Accommodations* (NCES 2003–467). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Lutkus, A.D. (2004). *Including Special-Needs Students in the NAEP 1998 Reading Assessment, Part II: Results for Students With Disabilities and Limited-English-Proficient Students* (ETS-NAEP 04-R01). Princeton, NJ: Educational Testing Service.

To Order Publications
Recent NAEP publications related to science are listed on the science page of the NAEP website and are available electronically. Publications can also be ordered from:

Education Publications Center (ED Pubs)
U.S. Department of Education
P.O. Box 1398
Jessup, MD 20794–1398

Call toll free: 1-877-4ED Pubs (1-877-433-7827)
TTY/TDD: 1-877-576-7734
FAX: 1-301-470-1244

The NAEP State Report Generator was developed for the NAEP 2005 reports by Phillip Leung, Anthony Lutkus, Paul Gazzillo, Mike Narcowich, Nancy Mead, Linda Myers, Mary Daane, and Bobby Rampey.

What is the Nation's Report Card?

The Nation's Report Card informs the public about the academic achievement of elementary and secondary students in the United States. Report cards communicate the findings of the National Assessment of Educational Progress (NAEP), the only continuing and nationally representative measure of achievement in various subjects over time. *The Nation's Report Card* compares performance among states, urban districts, public and private schools, and student demographic groups.

For over three decades, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other subjects. By making objective information available on student performance at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement and relevant variables is collected. The privacy of individual students is protected, and the identities of participating schools are not released.

NAEP is a congressionally mandated project of the National Center for Education Statistics within the Institute of Education Sciences of the U.S. Department of Education. By law, the Commissioner of Education Statistics is responsible for carrying out the NAEP project. The National Assessment Governing Board (NAGB) oversees and sets policy for NAEP. NAGB is an independent, bipartisan group whose members include governors, state legislators, local and state officials, educators, business representatives and members of the general public. NAGB's mission is, "to ensure equal access to education and to promote educational excellence throughout the nation."

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